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(54) **TUBE RACK TRANSFER DEVICE AND DIAGNOSTIC INSTRUMENT**

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See application file for complete search history.

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(57) **ABSTRACT**

A tube rack transfer device for transferring racks is presented. A first rail extends in a first horizontal direction and a second rail extends in a second horizontal direction orthogonal to the first direction. The second rail moves along the first rail and comprising a transfer head movable along the second rail. The transfer head comprises a control pin to be coupled with one of: an input pusher, translatable in the second direction, for transferring a rack from a carrier to a sampling area of an analyzer; an output pusher for transferring a rack from the sampling area to a carrier; a rack for transferring the rack between different carriers and/or between different positions of the same carrier. An in-vitro diagnostic instrument comprises an analyzer for carrying out tests on biological samples, a sample unit for inputting/outputting racks, a sampling area for withdrawing samples from tubes, and a transfer device.

13 Claims, 14 Drawing Sheets